



A.D. 1792 N^o 1861.

S P E C I F I C A T I O N

OF

CHARLES WILLIAM WARD.

APPARATUS FOR THE CONDENSATION
OF VAPOURS, &c.

L O N D O N :

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Apparatus for the Condensation of Vapours, &c.

WARD'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES WILLIAM WARD, of Hatton Garden, in the County of Middlesex, Gentleman, send greeting.

5 **WHEREAS** His most Excellent Majesty King George the Third, by His Royal Letters Patent under the Great Seal of Great Britain, bearing date the Fifteenth day of March, in the thirty-second year of His reign, did give and grant unto the said Charles William Ward, my executors, admors, and assigns, His special licence, full power, sole priviledge and authority, that I, the said
10 Charles William Ward, my executors, admors, and assigns, and every of them, by myself and themselves, or by my and their deputy and deputies, servants or agents, or such others as I, the said Charles William Ward, my executors, admors, or assigns, should agree with, and no others, from time to time and at all times thereafter during the term of years therein expressed, should
15 and lawfully might make, use, exercise, and vend, within that part of Great Britain called England, His Dominion of Wales, and Town of Berwick upon Tweed, my Invention of "**A METHOD OF CHANGING THE SMOKE OR VAPOR ARISING FROM THE COMBUSTION OF MANY KINDS OF SUBSTANCES INTO VARIOUS USEFUL MATERIALS ACCORDING TO THE SUBSTANCES BURNT,**" as to me, the said Charles
20 William Ward, my executors, admors, and assigns, or any of them, should seem meet, and that I, the said Charles William Ward, my executors, admors, and assigns, should and lawfully might have and enjoy the whole profit, benefit, and advantage from time to time growing and arising by reason of the said Invention, for and during the term of years therein

Ward's Improved Method of Changing Smoke, &c. into various Useful Materials.

mentioned, to have, hold, exercise, and enjoy their said licence, power, privilege, and advantage therein-before granted or mentioned to be granted unto me, the said Charles William Ward, my executors, admors, and assigns, for and during and unto the full end and term of fourteen years from the date of the said Letters Patent next & immediately ensuing, and fully to be compleat 5 and ended according to the Statute in that case made and provided; in which said Letters Patent is contained a proviso that if I, the said Charles William Ward, should not particularly describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, by an instrument in writing under my hand and seal, and cause the same to be inrolled 10 in the High Court of Chancery within one calendar month next and immediately after the date of the said Letters Patent, that then the said Letters Patent, and all liberties and advantages whatsoever thereby granted, should utterly cease, determine, and become void, as in and by the said Letters Patent, relation being thereunto had, will more fully and at large appear. 15

NOW KNOW YE, that I, the said Charles William Ward, in compliance with the proviso in the Letters Patent contained, do hereby describe and ascertain the nature of my said Invention of A Method of changing the Smoke or Vapor arising from the Combustion of many kinds of Substances into various useful Materials according to the Substances burnt, "as follows":— 20

All smoke or vapor from the combustion of different bodies is capable of being decomposed or condensed, but as the vapors according to the substance they proceed from require to pass through cold water, the steam of boiling water, or to be confined some time in cold vessells before they can be condensed, the change cannot be effected by any method hitherto known, because 25 none of them are capable of making the vapor pass thro' water, or of confining it long enough for it to condense without choaking up the draught of air necessary for the burning of the fires. My Invention supplies this defect by making a constant draught from the fires, and causing the vapor to pass through or be retained in proper vessells a sufficient time for it to condense; 30 this is affected by connecting the aperture of the chimney or chimneys with the condensing vessells or chambers by means of tubes or pipes; then it is to be placed either between this connection or behind the condensing vessells; any machine or machines whose principle depends upon the known property of all fluids rushing in to fill up the vacuum caused by their action, that is to say, 35 air pumps, water pumps, ventilators, bellows, air machines, &c.; these, however different their constructions, have all one common principle, and therefore the application of them or others depending upon the said principle to effect the purpose above mentioned, will be an infringement upon my said Patent;

Ward's Improved Method of Changing Smoke, &c. into various Useful Materials.

the size, number, and construction of the condensing vessells must depend upon the vapor to be decomposed, as some vapors are more difficult to condense than others, and therefore require a longer process. The apparatus being thus fixed, the substances to yield the smoke or vapor are to be set on fire under
 5 the chimney or chimneys, and the machine or machines set in motion by either steam engine, water, or horse wheel, &c. The vapour will be drawn from the fires by the action of the machine, and made to pass through the condensing vessells to be decomposed. There must be apertures at the end of the condensing vessells, if the pumping machine is placed between them
 10 and the chimney, to open and shut for the purpose of giving vent to the incondensable airs which will combine with the vapors in burning, and pass with them through the apparatus; if the machine is placed behind the vessells, there will be no occasion for those apertures.

In witness whereof, I have hereunto set my hand and seal, this Thirteenth
 15 day of April, in the year of our Lord One thousand seven hundred and ninety-two.

C. W. WARD. (L.S.)

Sealed and delivered, being first duly
 stampt, in the presence of

20

WILL. CHA^s WARD.

CHA^s B. ANDREW.

AND BE IT REMEMBERED, that on the Thirteenth day of April, in the year of our Lord 1792, the aforesaid Charles William Ward came before our said Lord the King in His Chancery, and acknowledged the Specification
 25 aforesaid, and all and everything therein contained and specified, in form above written. And also the Specification aforesaid was stampt according to the tenor of the Statutes made for that purpose.

MONTAGU.

Inrolled the Thirteenth day of April, in the year of our Lord One thousand seven hundred and ninety-two.

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